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34408 7590 12/23/2010

THE ECLIPSE GROUP LLP
6345 Balboa Blvd., Suite 325
Encino, CA 91316

EXAMINER

DABNEY, PHYLESHA LARVINIA

ART UNIT

PAPER NUMBER

2614

DATE MAILED: 12/23/2010

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/046,404

01/14/2002

Bernard M. Werner

HI03027USU P02017US

2074

TITLE OF INVENTION: CONSTANT COVERAGE WAVEGUIDE

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1510	\$300	\$0	\$1810	03/23/2011

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the SMALL ENTITY status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

A. If the status is the same, pay the TOTAL FEE(S) DUE shown above.

B. If the status above is to be removed, check box 5b on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above, or

If the SMALL ENTITY is shown as NO:

A. Pay TOTAL FEE(S) DUE shown above, or

B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check box 5a on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and 1/2 the ISSUE FEE shown above.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

PART B - FEE(S) TRANSMITTAL

**Complete and send this form, together with applicable fee(s), to: Mail Mail Stop ISSUE FEE
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INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

34408 7590 12/23/2010

THE ECLIPSE GROUP LLP
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I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

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10/046,404	01/14/2002	Bernard M. Werner	HI03027USU P02017US	2074

TITLE OF INVENTION: CONSTANT COVERAGE WAVEGUIDE

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nonprovisional	NO	\$1510	\$300	\$0	\$1810	03/23/2011

EXAMINER	ART UNIT	CLASS-SUBCLASS
DABNEY, PHYLESHA LARVINIA	2614	381-338000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

- ☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
- ☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list

- (1) the names of up to 3 registered patent attorneys or agents OR, alternatively, 1 _____
- (2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed. 2 _____
- 3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE (B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent) : ☐ Individual ☐ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:

- ☐ Issue Fee
- ☐ Publication Fee (No small entity discount permitted)
- ☐ Advance Order - # of Copies _____

4b. Payment of Fee(s); (Please first reapply any previously paid issue fee shown above)

- ☐ A check is enclosed.
- ☐ Payment by credit card. Form PTO-2038 is attached.
- ☐ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form).

5. Change in Entity Status (from status indicated above)

- ☐ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27. ☐ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature _____

Date _____

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This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

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10/046,404	01/14/2002	Bernard M. Werner	HI03027USU P02017US	2074
34408	7590	12/23/2010	EXAMINER	
THE ECLIPSE GROUP LLP 6345 Balboa Blvd., Suite 325 Encino, CA 91316			DABNEY, PHYLESHA LARVINIA	
			ART UNIT	PAPER NUMBER
			2614	
DATE MAILED: 12/23/2010				

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 631 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 631 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

Notice of Allowability

Application No.

10/046,404

Examiner

PHYLESHA DABNEY

Applicant(s)

WERNER, BERNARD M.

Art Unit

2614

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 11/29/10.
2. ☒ The allowed claim(s) is/are 1,3-7,11-19,21,22 and 24-28.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).**
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|--|--|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____. |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____ | 7. <input type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____. |

DETAILED ACTION

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 29 November 2010 has been entered.

Claims **1, 3-7, 11-19, 21-22, 24-28** are pending.

Examiner's Amendment

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Attorney Hamilton on 13 December 2010.

The application has been amended as follows:

- See attached claim sheet.

Reasons for Allowance

The following is an examiner's statement of reasons for allowance:

The prior art of record fails to teach an acoustic waveguide for controlling the direction of sound radiated from a transducer, the acoustic waveguide comprising: a first control curve; a second

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control curve; a third control curve; and a fourth control curve, where at least one of the first, second, third or fourth control curves differs from at least one other of the first, second, third or fourth control curves and a continuous three-dimensional surface coincident with the first control curve, the second control curve, the third control curve and the fourth control curve that intersects a circular throat end and a mouth, where the mouth is defined by a non-elliptical closed control curve and where the circular throat end is designed to couple to the transducer, as substantially described and connected with the functional language presented in the recited claims.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to PHYLESHA DABNEY whose telephone number is (571)272-7494. The examiner can normally be reached on Monday through Wednesday and Friday 9:00-4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Fan Tsang can be reached on 571-272-7547. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Any response to this action should be mailed to:
Commissioner of Patents and Trademarks
P O Box 1450

Art Unit: 2614

Alexandria, VA 22313-1450

Or faxed to:

(703) 273-8300, for formal communications intended for entry and for informal or draft communications, please label "Proposed" or "Draft" when submitting an informal amendment.

Hand-delivered responses should be brought to:

Customer Service Window
Randolph Building
401 Dulany Street
Alexandria, VA 22314

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

December 2, 2010

/PHYLESHA DABNEY/
Examiner, Art Unit 2614
/Fan Tsang/

Supervisory Patent Examiner, Art Unit 2614

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1.(currently amended): An acoustic waveguide for controlling the direction of sound

radiated from a transducer, the acoustic waveguide, comprising:

a first control curve;

a second control curve;

a third control curve; and

a fourth control curve, where at least one of the first, second, third or fourth

control curves differs from at least one other of the first, second, third or fourth control curves

[control curve]; and

a continuous three-dimensional surface coincident with the first control curve, the second control curve, the third control curve and the fourth control curve that intersects a circular throat end and a mouth, where the mouth is defined by a non-elliptical closed control curve and where the circular throat end is desired to couple to the transducer.

2. (canceled).

3. (original): The acoustic waveguide of claim 1, wherein the continuous three-dimensional surface further includes: a minimum surface area axial section plane of the continuous three-dimensional surface formed from the first control curve, second control curve, third

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control curve, and fourth control curve.

4. (original): The acoustic waveguide of claim 3, wherein the minimum surface area axial section plane is at the circular throat end of the acoustic waveguide.

5. (previously presented): The acoustic waveguide of claim 1, wherein the first control curve is symmetrical about a first axis with the second control curve.

6. (previously presented): The acoustic waveguide of claim 5, wherein the third control curve is symmetrical about a second axis with the fourth control curve.

7. (currently amended) : A method for creation of an acoustic waveguide for controlling the direction of sound radiated from a transducer, the acoustic waveguide, comprising:

identifying a first control curve;

identifying a second control curve that mirrors the first control curve;

identifying a third control curve that differs from the first control curve;

identifying a fourth control curve that mirrors the third control curve; and

generating a continuous three-dimensional surface formed by extending the first control curve, second control curve, third control curve and fourth control curve to intersect a circular throat end and a non-elliptical closed control curve forming a mouth, where the circular throat end is designed to couple to the transducer.

8-10. (canceled).

11. (previously presented): The acoustic waveguide of claim 3, where the minimum surface area axial section plane is disposed at a midsection of the acoustic waveguide axially between the circular throat end and the non-elliptical closed control curve.

12. (currently amended): An acoustic waveguide for controlling the direction of sound radiated from a transducer, the acoustic waveguide, comprising:

a first control curve;

a second control curve;

a third control curve; and

a fourth control curve, where at least one of the first, second, third or fourth control curves differs from at least one other of the first, second, third or fourth control curves [control curve]; and

a continuous three-dimensional surface swept about a central axis of the acoustic waveguide with minimal discontinuities and coincident with the first control curve, the second control curve, the third control curve and the fourth control curve that intersects a circular throat end and a non-elliptical closed control curve that defines a mouth where the circular throat end is designed to couple to the transducer.

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13. (currently amended): An acoustic waveguide for controlling the direction of sound radiated from a transducer, the acoustic waveguide, comprising:

a first control curve;

a second control curve;

a third control curve; and

a fourth control curve, where at least one of the first, second, third or fourth control curves differs from at least one other of the first, second, third or fourth control curves [control curve]; and

a continuous three-dimensional surface coincident with the first control curve, the second control curve, the third control curve and the fourth control curve that intersects a circular throat end and a non-elliptical closed control curve that defines a mouth, where the circular throat end is designed to couple to the transducer and the continuous three-dimensional surface comprising a minimum surface area axial section plane formed from the first control curve, second control curve, third control curve, and fourth control curve, where the minimum surface area axial section plane is disposed at a midsection of the acoustic waveguide axially between the circular throat end and the non-elliptical closed control curve.

14. (currently amended): An acoustic waveguide for controlling the direction of sound radiated from a transducer, the acoustic waveguide, comprising:

a first control curve;

a second control curve;

a third control curve; and

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a fourth control curve, where at least one of the first, second, third or fourth control curves differs from at least one other of the first, second, third or fourth control curves [control curve]; and

a continuous three-dimensional surface coincident with the first control curve, the second control curve, the third control curve and the fourth control curve that intersects a circular throat end and a non-elliptical closed control previously presented curve that defines a mouth, where each of the first, second, third and fourth control curves is convergent-divergent relative to an axial centerline of the acoustic waveguide and where the circular throat end is designed to couple to the transducer.

15. (previously presented): The acoustic waveguide of claim 12, wherein the continuous three-dimensional surface further includes a minimum surface area axial section plane of the continuous three-dimensional surface formed from the first control curve, second control curve, third control curve, and fourth control curve.

16. (previously presented): The acoustic waveguide of claim 15, wherein the minimum surface area axial section plane is at the circular throat end of the acoustic waveguide.

17. (previously presented): The acoustic waveguide of claim 15, where the minimum surface area axial section plane is disposed at a midsection of the acoustic waveguide axially between the circular throat end and the non-elliptical closed control curve.

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18. (previously presented): The acoustic waveguide of claim 12, wherein the first control curve is symmetrical about a first axis with the second control curve.

19. (previously presented): The acoustic waveguide of claim 12, wherein the third control curve is symmetrical about a second axis with the fourth control curve.

20. (canceled).

21. (previously presented): The acoustic waveguide of claim 13, wherein the first control curve is symmetrical about a first axis with the second control curve.

22. (previously presented): The acoustic waveguide of claim 13, wherein the third control curve is symmetrical about a second axis with the fourth control curve.

23. (canceled).

24. (previously presented): The acoustic waveguide of claim 14, wherein the continuous three-dimensional surface further includes a minimum surface area axial section plane of the continuous three-dimensional surface formed from the first control curve, second control curve, third control curve, and fourth control curve.

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25. (previously presented): The acoustic waveguide of claim 24, wherein the minimum surface area axial section plane is at the circular throat end of the acoustic waveguide.

26. (previously presented): The acoustic waveguide of claim 24, where the minimum surface area axial section plane is disposed at a midsection of the acoustic waveguide axially between the circular throat end and the non-elliptical closed control curve.

27. (previously presented): The acoustic waveguide of claim 14, wherein the first control curve is symmetrical about a first axis with the second control curve.

28. (previously presented): The acoustic waveguide of claim 14, wherein the third control curve is symmetrical about a second axis with the fourth control curve.